



Cold Climate Housing Research Center

**CCHRC**

# **PROGRESS REPORT**

**GRANT NUMBER: 7310026**

**COLD CLIMATE HEAT PUMP DEMONSTRATION**

**COLD CLIMATE HOUSING RESEARCH CENTER**

**9/1/2012 – 12/31/2012**

**Deliverables Submitted**

Thermal Response Test Results were submitted via e-mail on November 15, 2012.

**Budget**

**Amount Invoiced:** \$6320.95

A majority of the expenditures to date were for the ground thermal conductivity test. Additionally, a small amount of personnel time to date has gone into the design of the heat pump system and the monitoring plan update.

**Schedule Status**

We are keeping to the schedule laid out in the budget/milestones table.

**Percent Complete**

	<b>Start Date</b>	<b>End Date</b>	<b>Percent Complete</b>
Thermal Response Test	Sep-12	Oct-12	100%
Heat pump system design	Nov-12	Mar-13	60%
Update monitoring plan	Nov-12	Mar-13	30%
Ground loop installation	Jun-13	Jul-13	N/A
Heat pump installation	May-13	May-13	N/A
Data acquisition system installation	Jun-13	Aug-13	N/A
Commissioning	Sep-13	Sep-13	N/A
System monitoring and maintenance Year 1	Sep-13	Sep-14	N/A
System monitoring and maintenance Year 2	Sep-14	Sep-15	N/A
System monitoring and maintenance Year 3	Sep-15	Mar-16	N/A
Data analysis, LCCA, and draft report completion	Apr-16	Jun-16	N/A
Final project report	Jul-16	Jul-16	N/A

**Work Progress**

Thermal Response Test – The ground loop thermal response test was completed on October 12. GRTI, the data contractor, returned a final report on the ground thermal conductivity which is attached. In addition, to the ground thermal conductivity CRREL helped us to drill a core sample. That report is also attached.



Setting up the ground thermal conductivity test.

Heat pump system design – The system ground loop design has had to be modified to take into account the results on the ground thermal conductivity information. Its size is determined, but its exact configuration is still not final. The design for the interior components of the heat pump is in schematic form and will be finalized in the near future.

Update monitoring plan – The data standards document is started, but the final configuration of the ground loop is needed before this can be completed.

#### **Future Work**

Heat pump system design – The heat pump system design will be completed in the next quarter.

Update monitoring plan – The monitoring plan will also be completed in the next quarter.